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AN  
ACCOUNT  
OF THE  
YELLOW FEVER, &c.

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AN  
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OF THE  
YELLOW FEVER,

WITH A  
SUCCESSFUL METHOD OF CURE :

BY  
*JAMES BRYCE*,  
SURGEON,  
LATE OF THE BUSBRIDGE EAST INDIAMAN.

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—Quin potius levitas hominum atque inconstantia, hinc optime perspici potest; qui donec res aliqua perfecta sit, eam mirantur fieri posse; postquam facta semel est, iterum mirantur eam jam pridem factam non fuisse.

FR. BACONIS de Augment. Scient. lib. 1.

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1796.

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BY  
JAMES BRUCE



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AN ACCOUNT OF  
THE RAVAGES OF THE YELLOW FEVER IN  
OUR WEST INDIA SETTLEMENTS, IN PHILADELPHIA,  
AND IN OTHER QUARTERS, WILL LONG BE REMEMBERED;  
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OR PREVENTING THE DISEASE IN THOSE REGIONS,  
AS IT TENDS TO DAMP THE ENTERPRISING

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ACCOUNT, &c.

THE ravages of the Yellow Fever in our West India Settlements, in Philadelphia, and in other quarters, will long be remembered; and the little efficacy of medicine, either in curing or preventing the disease in those regions, as it tends to damp the enterprising



prising spirit of our soldiers and seamen, when called to serve their country in the western world, so it unavoidably throws a gloom over the minds of the relations they leave at home; who, instead of cherishing the hope of seeing them return with victory and honour, think of them merely as so many victims, devoted to disease and death.

In the city of Philadelphia, there died of the yellow fever, betwixt the 1st of August 1793 and the 9th of November following, *four thousand and forty-four* persons \*; yet, even this mortality, in proportion to the numbers afflicted

\* *Vide* An Account of the bilious remitting yellow Fever in Philadelphia, by Dr Rush, p. 128.

afflicted by the disease, was small, when compared with what happened among Europeans in the West Indies. Dr Rush of Philadelphia, though fond of the practice he had adopted for the cure of this distemper, thinks, that from the middle of September, till the disease ceased in November, it was considerably less successful than it had been before that time\*; and Dr Jackson places a more successful mode of treating it, among the desiderata in medicine.

The origin and nature of the disease also appear as yet to be a matter of controversy. Dr Rush attributes  
the

\* *Vide* Rush, p. 315.

the rise of it in Philadelphia to the putrefaction of a cargo of coffee left upon a wharf; contending, that the putrid effluvia from animal substances are much less apt to engender pestilential diseases than those arising from vegetables \*; and Dr Chisholm of Grenada ascribes it to the heat and moisture of the climate of Boullam on the coast of Africa, operating on the ship's company of a vessel called the Hankey, who were there for some time in summer 1792, crowded in little room, and without proper attention to ventilation and cleanliness †.

Again;

\* *Vide* Rush, p. 25.

† *Vide* Dr Chisholm's Account of the malignant pestilential Fever, &c. p. 83. *e seq.*



Again; as to the nature of the disease, one class of Physicians have considered it as highly putrid, and requiring to be treated with bark, wine, and opium. Another party, of whom Dr Rush is one, hold it to be inflammatory, and to be cured by means of early, long, and continued evacuations; chiefly by bleeding and purging: and deem bark and opium absolute poisons in it. A third party, which is that of the French Physicians, prescribe moderate evacuations and gentle cordials. And a fourth, or rather Dr Chisholm, recommend moderate evacuations and cordials, merely as preparatory for a mercurial salivation, on which alone they seem willing at all times to rest the cure of the disease.

In

In these circumstances, as all information respecting the history and cure of such a disease must be desirable; I am induced, by the advice of some very respectable medical friends, to publish the following Observations, (in hopes that they may tend, in some measure, to throw light on this subject), concerning a fever of a very formidable aspect, which broke out on board the *Bulbridge East Indiaman*, during her voyage from England to Madras and Bengal in summer 1792, about the time of crossing the Equator in the Atlantic Ocean, although she had been without communication with port or vessel from the time of leaving the Downs. It was my third voyage as surgeon of an Indiaman; and neither in that capacity, nor in the

the course of my education at Edinburgh or in London, nor while at Bombay, Madras or Bengal, had I ever seen an epidemic of so threatening and malignant a nature. After it broke out, the vessel was prevented by the weather from touching at any port till she arrived at Madras, so that the sick were deprived of the many refreshments which the land might have afforded; and I was left to my own conjectures and judgment concerning the nature and treatment of the disease. I was fortunate enough, however, to be so successful in that treatment, that I lost only three persons out of two hundred and fifty who were attacked by the disease \*, though it was so general, that

By numbering the relapses and the new attacks of fever which occurred after being several weeks completely



that not above twelve persons out of the whole number on board entirely escaped it.

On my return from India, towards the end of the year 1795, I had an opportunity of perusing the publications of Dr Rush, and Dr Chisholm, which have satisfied me fully, though I confess, to my no small surprise, that the disease which proved so destructive in the West, was precisely the same that I became so well acquainted with in 1792, at the very time that, according to Dr Chisholm, it was engendered in the Hankey, on the coast of Africa.

It

pletely recovered, the amount might have been fairly stated at three hundred cases.

It was not without some difficulty, nor without finding my opinion confirmed by my medical friends, that I yielded at length to the persuasion, and indulged the flattering idea, that I had been the instrument, in the hand of God, of saving many valuable lives, some of them friends and benefactors, from a disease which has hitherto been classed with the plagues of Egypt and Constantinople.

But highly gratifying as this reflection is, I acknowledge it would be still a higher satisfaction to me, were it afterwards found that the simple and easy treatment I adopted, should prove equally successful in the West Indies; and afford a protection there to many brave men, from a calamity which has

B

proved

proved to them far more fatal than the sword of the enemy: And I will fairly confess, that I do not only indulge somewhat of that hope, but flatter myself, that the same kind of treatment may also be found highly beneficial in the cure of some fevers of this country, which have hitherto too often withstood the power of the medicines employed for that purpose. But, at any rate, should these expectations prove ill-founded, I shall at least have the satisfaction of having endeavoured to contribute some aid in matters of such importance, added to that, of not having been with-held in this execution of my duty to the public, either from indolence and indifference, or from, to me a far more powerful obstacle, the apprehension of the critic's eye on the  
work



work of a tyro in the art of book-making, who never indulged such confidence in his talents for writing, as to purpose becoming a candidate for literary fame,

THE *Busbridge* East-Indiaman, commanded by Thomas Robertson, Esq; sailed from the Downs for Madras and Bengal on the 15th of April 1792\*, having on board 109 men belonging to the

\* This, according to Dr Chisholm, is nearly the time of sailing of the ship *Hankey*, from England, for Boullam on the coast of Africa; which unfortunate ship, according to him, first introduced the fatal disease among the West India settlements. *Vide* Chisholm's Account, &c. p. 82.

the ship's company, 130 recruits belonging to the Honourable East India Company, and 25 passengers. After experiencing very boisterous weather in the Channel, we got clear out from the land about the beginning of May, and on the 26th of that month crossed the equator in 27 degrees of west longitude. The weather for some days had been very sultry, and, as is common in those latitudes, we had frequent heavy showers of rain. The mercury in the thermometer stood from 80° to 86° of Fahrenheit.

About this time, the disease I am to treat of made its appearance; first, among the recruits, and in about a fortnight afterwards spread among the ship's company. In the East India Company's

Company's ships carrying troops to India, the ship's company are lodged upon the gun-deck, which is freely ventilated by the gun-ports and scuttles; and the troops are lodged upon the deck below, called the orlop-deck, which is chiefly ventilated by wind-fails in the hatchways; but these, unless constant attention be paid to them, are often, from carelessness, or design of those persons placed next them, rendered totally ineffectual for that purpose. From the time the disease first appeared, it was common for six or seven to be attacked by it daily; and in the space of twelve weeks, almost every person in the ship, not only had laboured under it, but many had suffered repeated relapses; and during that



that time there were generally from thirty to forty on the sick list.

During the whole month of June, the weather was uncommonly calm. The south-east trade winds blowing very faintly, and entirely dying away in about 12 degrees of south latitude, occasioned a very tedious passage of six weeks from the equator to the Cape of Good Hope; and, during this period, a sky, without a cloud, exposed the vessel to the scorching rays of a tropical sun, and exasperated the symptoms of this disease, which, from what follows, will, if I am not extremely mistaken, appear evidently to have been of the same nature with that which elsewhere proved so fatal.

On

On the 10th of July, when we were at length gratified with the sight of the long expected land of the Cape of Good Hope, and every one was indulging the fond hopes of revisiting the shore, and enjoying the ample refreshments of fruits, and vegetables, which that settlement yields in profusion, and which at this time were vehemently longed for by all, and would have been particularly beneficial to the sick; an unfortunate gale came on, and, blowing directly from the shore, disappointed at once the expectations we thought ourselves on the point of realizing. In this way we were compelled, not only to proceed on our voyage, but to deviate several degrees to the southward of the usual track. This circumstance, however, gave us an opportunity

opportunity of observing the effects of cold on the distemper. While carried in this manner into 42 degrees of south latitude, we experienced a great change in the temperature of the atmosphere, the mercury in the thermometer falling gradually to the 45th degree of Fahrenheit. The gale at length abated, and was succeeded by thick and hazy weather. But, what is extremely remarkable, neither the northern gale, which lasted about ten days, nor the moist and hazy weather which followed, and continued for four or five days, appeared to lessen or augment, in any great degree, the violence of the disease.

On the 25th of July, we were able to bear away to the northward, and  
from



from that time, till we arrived in the neighbourhood of Ceylon, we enjoyed fresh and favourable gales of a moderate temperature; but there again, a calm under the land immersed us in the same sultry heats we had experienced in the Atlantic. Still, however, no striking alteration appeared in the state of the sick, from all these changes of climate; the numbers on the sick-list for nearly three months continuing much the same. The symptoms of the disease indeed became milder during the fresh and favourable gales we enjoyed in our course northward; but as their violence did not return with the calm and sultry weather we encountered on the coast of India, I cannot help attributing the milder aspect the

C                      disease

disease then assumed, to the improvements in the method of cure which had by that time been learned from experience and observation.

How this disease originated; whether from contagion brought on board, or generated in the ship; or whether from some other powerful and very general cause, I shall not take upon me to determine. The general prevalence of it among those on board, no doubt, seems to suggest contagion as the cause, yet the following observations are rather adverse to this opinion.

1. The length of time after our departure from England before the disease appeared, renders it improbable

bable that contagion was thence derived.

2. Our having frequent intercourse with the crew of the *Rose* Indian-man while the disease raged on board of us, without their being affected by it, makes its contagious nature, except under particular circumstances, questionable. And accordingly,

3. Although many convalescents were sent on shore at Madras, some of whom even suffered relapses during their stay there, the disease was not communicated to the inhabitants, nor did it afterwards appear on board, although, after we had been there only ten days,



days, several new passengers proceeded with us to Bengal.

The other causes which might operate in producing this disease, are to be looked for in circumstances of diet, situation, and state of the atmosphere; and I confess, that it was to a combination of these that I was inclined to attribute chiefly the calamity which assailed us. A sudden change to a full diet of animal food, and that not of the most digestible kind, with an almost total deprivation of vegetables, in a hot climate, and where the people, especially the young recruits, were unable to take their wonted exercise, may well be supposed to prove pernicious to health. The salted provisions in use had been cured in England,

land, and certainly were inferior in quality to such as are usually imported from Ireland. Salt beef, salt pork, and stock-fish, were served out to the ship's company and recruits alternately, and they had ample allowance of peas-soup, pudding, mustard, oil and vinegar. To each man also was served out five pints of water daily, and there was also an allowance of spirits, which, in hot weather, was made into punch \*. These circumstances, however, happen too commonly without any disease appearing

\* Dr Chisholm remarks, that the French inhabitants, from their temperate and regular mode of living, were almost totally exempted from the yellow fever, while some French prisoners who were obliged at that time to live on salted animal-food, and to use rum diluted for their drink ; all had the disease, and many fell victims to it. *Vide* p. 220. and 221.

ing such as that in question, to entitle me to attribute its origin to them, without something peculiar in the state of the atmosphere, or in the health of some individual on board, or some imported *fomes* from England, having combined to engender it. And it is to be observed, that the disease was not entirely confined to those using salted provisions; for several of the passengers were also severely affected by it. Neither can it be ascribed to want of air and cleanliness; every attention having been used from the time of our sailing to keep the ship clean and well aired. Every day, when the weather would permit, all the bedding was ordered upon deck; the different apartments were thoroughly cleaned and fumigated with wetted gunpowder, tar,



tar, or tobacco, and the beams and decks afterwards sprinkled with boiling vinegar ; while the wind-fails were attentively kept in proper order at each hatchway.

At crossing the equator, an absurd practice, established by long custom, prevails among seamen, of completely drenching with salt water all those who have never been in these regions. It was on the day following the performance of this ceremony, that the disease first appeared. Every exertion, however, had been made by Captain Robertson and the officers, to restrain the ceremony within moderate bounds, and also to counteract any bad consequences which might have been expected to arise from it, by immediately afterwards

afterwards ordering the wet clothes upon deck, and getting all made dry again, as soon as possible. But I can scarcely ascribe the disease to this source, which might occasion a cold or a common fever, but can hardly be supposed, without some extraordinary combination of a very peculiar nature, to have produced the malady now to be described. Nor can it with justice be suspected to have arisen from the first cases having been neglected, and its malignant characters having been the consequence of the want of the requisite conveniencies and refreshments for the sick. On the contrary, much honour is due to Captain Robertson for his attention to the sick from the beginning, and that not only in supplying them readily with every

every article his stores could afford, but for the anxiety with which he planned, and zeal with which he adopted, and saw executed, every expedient which promised to prove in any respect advantageous, either for the prevention and cure of the disease, or for the comfort of those afflicted by it.

## D HISTORY



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### HISTORY OF THE SYMPTOMS.

THIS disease was generally ushered in by cold, and alternate hot fits, severe headach, vertigo, and dimness of sight, a sense of fulness and pain in the balls of the eyes, sometimes in one only, and sometimes in both, with great impatience of light.

The pulse was always frequent, sometimes of a natural fulness, but in general small, and often tremulous.

The

The breathing was always oppressed, and performed with uneasiness, and deep sighing; and the countenance had all that suffused and haggard look characteristic of typhus.

The eyes always appeared very dull, and the muscles of the upper eye-lids seemed in a relaxed state, so as to occasion them to be half shut, unless when the patient was roused, or made some exertion. The white of the eyes was generally, from the first, tinged yellow.

Want of appetite, and sickness, even to vomiting, were common symptoms, and the matters thrown up were generally very bitter and yellow. The tongue was dry, and loaded with a  
thick

thick fur; there was great thirst, and the state of the bowels was always costive. The urine was voided in small quantities, and was high coloured, often occasioning a burning pain along the course of the urethra. From the first attack, the patient complained of the greatest prostration of strength, pains in all his joints, and in the calves of his legs, often to such a degree as entirely to prevent walking, with much oppression about the præcordia, and in most instances, there was a considerable degree of nervous tremor over the whole body and extremities. Disturbed sleep, and frightful dreaming, were constant attendants on the disease, and the patient had always great tendency to delirium.

These



These were, in general, the symptoms on the first attack. It happened, frequently however, that a degree of languor, dulness of the eyes, and fallow colour of the whole skin, prevailed in some for a few days, and went off again without the disease then appearing. At other times the patient became at once delirious, without any symptom of fever appearing for some hours; and again, the disease would make its appearance, by inducing a paralytic state of some of the extremities. In many, the tremors, from the first attack were so violent, as entirely to prevent the use of the hands; and both the upper and lower extremities were often affected with cramps, and strong spasmodic startings. The muscles of the tongue and  
lower

lower jaw were also often so much affected with tremors, as to prevent articulation.

The oppression at the præcordia was frequently increased to a sense of fulness, and obtuse pain in the epigastric, and right and left hypochondriac regions, where on examination, a degree of fulness was often perceived. The pain was increased by pressure, and darted sometimes to the right, and sometimes to the left shoulder; but this was by no means so frequent, or so severe, as to render an inflammation of the liver suspected.

The fever was without intermission, except that which was rather an interval succeeded by a relapse, than a period

riod of the same attack: But it had, in almost all cases, evident remissions and exacerbations: These, however, observed no regular period, but seemed entirely dependent on circumstances of diet or evacuation. In many, for some days, the febrile symptoms were very high, while in others, they continued so moderate, that they were scarcely to be detected, unless by the uncomfortable, very various, and almost indescribable sensations of the patient. If these were, however, at that time neglected, the disease soon burst out with all the violence already described.

In a few days, by a proper attention to the use of the remedies prescribed during this stage, the febrile symptoms  
often



often abated, and the return to health was, in many instances, as quick as the attack of the disease; in most cases, however, the symptoms proved more obstinate. The headach, giddiness, pain in the eye-balls, across the forehead, and in the calves of the legs, became almost insupportable; the pulse was now exceedingly frequent, small, tremulous, and sometimes intermitting and irregular; and delirium, subfultus tendinum, with hic-cough, and frequent nervous or convulsive paroxysms, seemed to threaten the immediate dissolution of the patient. The eyes and whole skin were, in this stage, remarkably yellow; and violent straining to vomit was a most distressing symptom. The matters now thrown up, either resembled the grounds

grounds of coffee, or consisted of a watery fluid, with many small dark-coloured, membranous looking substances floating in it. The stools procured by medicine were dark coloured, often quite black, of a shining appearance, very viscid, and emitted an excessively putrid fetor; they occasioned much scalding pain in passing, and often excoriated the extremity of the rectum, and all around it, to such a degree, that unctuous applications became highly necessary.

To these evacuations by stool only, however, did the above threatening symptoms yield; and it was always observable, that the more dark coloured and fetid such discharges were, the more early and certainly did the

E                      symptoms

symptoms disappear. Their good effects were so instantaneous, that I have seen a man carried upon deck, perfectly delirious, with subfultus tendinum, and in a state of the greatest apparent debility, who, after one or two copious evacuations of this kind, has returned, of himself, composed, astonished at his newly acquired strength, and declaring himself to be infinitely recovered, which indeed was evident to every one, from his changed countenance, and general appearance.—Here I must remark, that I never saw a disease where the countenance so surely indicated either danger or returning health.

Hemorrhages from the nose were, in this stage of the disease, very frequent.



quent. In one or two cases, these appeared to be critical and salutary, the patient recovering almost immediately afterwards; in most instances, however, they were not attended with the same happy effects; but, (from the feeble and fluttering state of the pulse, general tremors, subsultus tendinum, frequent nervous fits resembling hysteria, and faintings, which generally accompanied them,) seemed merely to mark the dissolved state of the blood, or great relaxation and tenderness of the vessels.

After some very uncertain number of days, when the evacuations succeeded well, the abatement of fever was indicated by the tongue growing clean about the tip and edges, the  
head

head and eyes becoming less painful; and above all, by the patient enjoying sound and refreshing sleep. These were the certain forerunners of at least a complete intermission; and for some time, from the first appearance of the disease, when I was not thoroughly acquainted with it, it proved to be merely an intermission, relapses being then, after a few days apyrexia, very common.

The patient, apparently in a convalescent state from fever, complained of a fixed pain, or numbness in some particular part; as one eye, one temple, shoulder, knee, or even joint of the fingers; and although he seemed to acquire strength, and made very light of these, yet I soon found, that  
if

if they were neglected or treated merely as topical affections, the disease never failed to be renewed, in the course of five or six days. During this state of apyrexia, I also observed, that the countenance retained an unhealthy fallow look, and that all the secretions were diminished. Disturbed sleep and obstinate costiveness always marked the return of the disease, which, when renewed, ran exactly the same course as formerly, only in many cases the symptoms were more violent.

In those cases, in which the evacuations did not succeed properly, the disease was always proportionally violent: and in one case, where the patient (a native of India) would not take medicines sufficient to procure these,



these, by any means whatever, delirium, subfultus tendinum, hiccough, and hemorrhages from the nose, soon took place, and convulsive paroxysms put an end to his life on the morning of the fourth day. In him, the eyes and whole skin were remarkably yellow. His eyes were fixed, and staring wildly, with the pupils considerably dilated for some time before death; and the pain and fulness of the epigastrium were considerable, amounting at last to an uniform elastic swelling over the whole abdomen.

In another case, where the patient, (also a native of India), had concealed all his symptoms for two days; convulsive fits terminated his life on the evening of the third. In the morning  
of

of the same day, he had taken a cathartic; but, owing, I suppose, to the collection of matters in the primæviæ, and the insensibility thereby induced, it had scarcely any effect, although given with every attention, and in the usual full quantity.

One European, who had got over a first severe attack, but who had a great aversion to medicine, and none to spirits, concealed all his symptoms while in a state of apyrexia; the attack of fever was renewed, most probably hastened by his own indiscretion, and then very soon occasioned his death. Without having previously complained of any pain, he said he felt like something burst about his stomach: Immediately after which, his breathing  
became

became very laborious; his pulse sunk and intermitted; and he expired in two hours afterwards: The body, in three hours after death, emitted an uncommonly putrid fetor; and there was a discharge of thin putrid blood from the mouth and rectum.

It was with much regret that I abstained from examining the state of the abdominal viscera in these patients after death; but the effect that such an operation might have had on the minds of those labouring under the same disease, of whom there were many at the time, sailors being exceedingly superstitious on this head, made me relinquish the attempt.

In



In the advanced stages of the disease, the pulse was very frequent, small, tremulous, and often irregular; but in proportion to the evacuation of the putrid and glareous matters, it became full, soft, firm, and regular. If the evacuations were watery, and without fœtor, they were very debilitating to the patient, and attended with no good effects on the pulse, or other symptoms. The breathing was also in this stage very laborious, and performed with moaning, and deep sighing.

The appetite for food was entirely lost, but the thirst was excessive; and the white fur with which the tongue was covered at the beginning of the disease, was now changed to a dark

F

brownish

brownish colour. In that patient, where evacuations could not be procured, from his obstinacy in refusing all medicine, the tongue and gums were covered with a thick black crust.

The urine at first high coloured, was afterwards very various in its appearance; in some, at one time, being of a thick whitish appearance, and depositing a white sediment, and at another time of a deep yellow colour, and covered with an oily-looking pellicle; but I never observed, that these states of it were symptomatic, or the consequences of any particular change in the disease. It often emitted some degree of fetor; and frequently was of so acrid a nature as to induce a considerable degree of strangury.

The

The state of the bowels I have already mentioned to have been always costive; and in the greater number of instances, it was indeed most obstinately so; especially if the disease had continued any length of time, without evacuations having been procured by medicine. Then it was almost impossible to move them by any means whatever; and this of course afforded a most unfavourable prognostic. This obstinate symptom seemed always in proportion to the quantity of viscid and putrid matters, which had been present in the primæviæ. Flatulence, more or less of which constantly attended the disease, was in the advanced stages of it, particularly distressing; and the eructations being highly fetid and putrid,

were



were very offensive both to the patients and the attendants.

The state of the skin through the whole disease was extremely various; sometimes, even during the presence of the most violent symptoms, it was soft, cool, and moist; while, at other times, the hard and parched state of it was almost the only morbid symptom. The colour was from a dirty fallow, to a deep yellow.

A great degree of listlessness and aversion to motion, together with a total disregard and indifference about every concern in life, were through the whole progress of the disease constant and conspicuous symptoms; and in the advanced stages, the patients, if  
left

left to themselves, were generally found lying upon their back, in a comatose state, with their eyes either half shut, or with the eye-balls unusually tumid and staring. A considerable preternatural dilatation of the pupils of the eyes was at those times very observable, even when the patient had been lying in that kind of stupor, exposed to a bright light.

Although this fever generally assumed a continued form; and at some period of its course, showed all the symptoms here mentioned; yet, in slighter attacks, there were very considerable remissions and exacerbations. In a few cases, the disease was preceded by regular paroxysms of a quotidian

tidian or tertian intermittent; for the cure of which, bark, given in the usual manner, was not only ineffectual, but, on the contrary, seemed to hasten the change of its type into that of continued fever.



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**OF THE METHOD OF CURE.**

For some time after the appearance of the disease, the cure was attempted in the usual manner recommended by authors who treat of the diseases of warm climates, *viz.* by first clearing the primæ-viæ, and on the appearance of a remission or complete intermission, which was thus often procured, giving the bark freely : And I confess I was much disappointed, when, after congratulating the patient in this state of  
apyrexia,

apyrexia, on the prospect of his speedy recovery, I experienced the mortification of seeing all the symptoms of continued fever soon after renewed with redoubled violence; more especially as the milder purgatives now produced little or no effect upon the bowels; so that all hopes of inducing a remission of the fever from them were denied me, and the bark shewed itself very ineffectual for that purpose, and evidently improper to be longer prescribed.

The increase of all the bad symptoms, especially the foulness of the tongue, the costiveness, to which there had ever been great tendency, and the failure of the milder purgatives in producing any effect, led me, however, to suspect,

suspect, that a great quantity of putrid or poisonous matter was accumulated in the bowels, for the evacuation of which, the most active remedies would be required.

The event justified the opinion, and I soon had the satisfaction to find, that by means of the most drastic purgatives, provided early recourse was had to them, I had acquired complete controul over this cruel distemper, even in its most formidable attacks. I then formed a plan for the regulation of my future practice, on these three general indications.

1. To evacuate all putrid offending matters.

G

2. To



2. To prevent the re-accumulation of these. And,
3. To relieve urgent symptoms.

In the execution of the first indication, I necessarily employed cathartics, emetics, and sudorifics,

On the smallest appearance of a putrid tendency in fevers, it has been an established maxim, that purgatives as debilitating the powers of the animal œconomy, in proportion to their operation, were extremely hurtful; but when this putrid tendency has for its source, accumulations of putrid matters in the abdominal viscera, or of morbid matter in circumstances capable of being carried off by the intestinal

testinal canal, when its action is excited by powerful cathartic stimuli, then, although the symptoms should be severe, surely they must be sooner and more effectually overcome, by completely removing the poison, than by merely attempting to support the patient's strength, till those accumulations are absorbed and thrown out by the various emunctories, or till the putrid mass be corrected by antiseptic medicines; especially in warm climates, where putrescence goes on with much rapidity.

In order to accomplish this evacuation of the putrid matters, I found the most active of the purging medicines absolutely necessary; and that which to me, appeared by far the most effectual

tual for the purpose was Calomel, either given by itself, or joined with other powerful cathartics.

I am therefore most anxious to recommend a more free use of calomel, than has hitherto been common even in warm climates, being fully convinced that the greatest part, if not all the acute diseases of those regions, proceed, either immediately or remotely, from accumulations of offending matters in the bowels. I have seen so many instances of the good effects of this medicine, in preventing and curing the fevers of warm climates, without ever witnessing any bad effects from a liberal and judicious use of it, that I do think any error which is likely to arise from its use, must proceed



ceed from giving it in too small a quantity. This most valuable medicine seems also peculiarly adapted to diseases of warm climates, because, from its small bulk, it becomes difficult for the stomach to reject it, though vomiting should occur soon after taking it, a circumstance particularly troublesome in fevers of those regions: Its operation is also very immediate, and the violence of its action in the primæ-viæ, where either a degree of torpor of the intestines has taken place from the presence of putrid matters, or where the coats of the whole intestinal canal are so loaded with viscid matters, as to render the milder purgatives totally inactive, points it out as peculiarly eligible.

How

How far calomel might be given with advantage in fevers of this country, I am uncertain; but, from the great similitude I have often observed in the attack, and even progress of symptoms of the fevers of this country and of those of hot climates, I am induced to believe, that a free use of it would in a great proportion of cases be attended with the very best effects. Besides, I myself have frequently seen the typhus fever of this country disappear, after spontaneous, dark coloured, and very fetid evacuations, similar to those procured by medicine in this disease. The ingenious Dr Carmichael Smyth of London, speaking of the action of calomel in the jail-fever at Winchester, where his practice was very extensive, says, ' It clears the  
' bowels

‘ bowels more completely than any  
‘ other medicine, dislodges hardened  
‘ scybalæ or worms, and more cer-  
‘ tainly produces a complete intermis-  
‘ sion of fever \*.’

On the first attack of the disease,  
I generally gave eight or ten grains of  
Calomel, made into a pill of as small  
a bulk as possible †; and in three  
hours afterwards, a solution of purging  
salts, with emetic tartar ‡. These ne-  
ver

\* *Vide Smyth on the Jail-distemper, page 105.*

† R. Calomelanos, gr. x.

Confect. card. gr. v. vel. q. s. M. et divide in  
pilul. ii.

‡ R. Sal. cathartic. amar. ℥i.

Tart. emetic. gr. iii.

Aq. font. ℥vi. M. solve.

Capiat æger ℥i. omn. hor.



ver failed to operate both upwards and downwards, and commonly produced an alleviation of all the symptoms: In some cases, they were even sufficient to carry off the disease entirely; and it was observed, that in these, the evacuations, though yellow and acrid, were not so putrid and fetid as those which were obtained in the more advanced stages; neither had the patient, to any considerable degree, that anxiety or oppression about the præcordia, and fulness in the epigastrium, or hypochondriac regions, formerly mentioned.

In by far the greatest number, however, the disease was more obstinate, and required more powerful remedies: for although relief was at first

first generally obtained by every evacuation from the bowels, yet it was soon observed, that a repetition of saline purges, by procuring merely watery stools, exhausted the patient's strength much more than the good effects from them compensated; and recourse was then had to calomel, which either by itself, or joined with cathartic extract, or powder of jalap, never failed carrying off great quantities of very fetid, putrid, and black scalding matters, to the great relief of the patient. A full dose of calomel was always given at night\*, and repeated in the morning, with some powder of jalap, or cathartic extract, if ne-

H cessary;

\* R. Calomelanos, gr. x. vel xv.

Confect. card. q. f. M. ft. mass. quæ dividatur  
in pil. ii. hor. somn. sumend.

cessary \*; and so obstinate was the state of the bowels, that it has often been necessary to repeat this morning dose during the day, to procure even scanty evacuations. Gamboge, joined with calomel, was also used with much advantage †. Castor oil was also used, but

\* R. Calomelanos, gr. x.

Extr. cathartic. gr. xv. M. ft. mass. quæ dividatur in pilul. iv. æq.; vel

R. Calomelanos, gr. x.

Pulv. julap. ℥i. vel gr. xxv.

Confect. card. q. s. ft. bolus.

† R. Gum. gambog. ʒss.

Calomelanos, ʒi.

Tart. emetic. gr. iv.

Ol. juniper gtts. vi.

Spt. vin. q. s. ut ft. mass. quæ dividatur in pilul. xxx. æqual.

Capiat



but from its bulk, and the irritable state of the stomach, it was seldom retained; and when it was, unless a large dose of calomel had preceded it, the evacuations were scanty, and seldom of that nature which proved so desirable for the alleviation of the symptoms: In fact, there were no medicines, however fully they might appear to evacuate the alimentary canal, that much relief was procured from, except calomel, which led me to suspect, that the seat of the disease was not confined entirely to the primæ-viæ; but that these putrid, offending matters, on which the disease seemed entirely to depend, might proceed from a vitiated secretion

Capiat æger ii tertia q.que hor. ad alv. libere movend.

tion in the liver or pancreas, or perhaps from an infarction of some of the fluids in these, or the spleen; and that it was necessary to excite the peculiar action of the containing vessels, in order to enable them to throw off the offending load. — How much calomel is adapted for this purpose, may, I think, be presumed from its action on the salivary glands.

In fevers of a somewhat similar nature in Bengal, I have been informed, that on dissection, the liver, spleen, or pancreas, have been found much enlarged, and full of thin putrid blood; or have burst, and been in a gangrenous state, and then, a quantity of thin putrid blood has been found in the cavity of the abdomen.

Glysters

Glysters were frequently of use by accelerating the action of the calomel; but if they failed in that, they occasioned such fatigue, and so much exhausted the patient's strength, that I seldom ventured to order them in the advanced stages of the disease.

It has frequently been mentioned as an argument against purging in low fevers, that even the evacuation procured by a glyster has often sunk the patient's strength so much as to endanger immediate death; but I have constantly observed, in the advanced stages of this disease, (and the same thing has been observed in the jail-fever of this country \*) that several stools procured by

\* *Vide* Smyth on the Jail-distemper, page 87.



by the operation of a brisk cathartic, were by no means so weakening as a single evacuation from the operation of a glyster. The great cause of debility in low fevers, especially in those of hot climates, which attack suddenly, and run their course with much rapidity, seems plainly to be some accumulation of viscid and highly putrid matters in the bowels, which it is utterly impossible for a purging glyster, from its feeble and confined action, and in most cases even for saline purges, which pass off quickly, and procure only watery stools, to evacuate. I am so thoroughly convinced of this opinion, from what I have observed in this disease, that I am inclined to attribute the want of success, which practitioners have hitherto experienced

ced in the cure of fevers, especially in the cure of those of the nature I am now describing, entirely to their inattention to this circumstance. I must therefore observe, and I do it with confidence; that although glysters and saline purges, by procuring merely watery evacuations, without removing the poison, exhaust the patient's strength exceedingly, and are therefore improper in the advanced stages of this disease; yet, that at those times a full dose of calomel, either by itself, or joined with some other powerful cathartic, may be given with the greatest advantage; nay, that it is then almost the only remedy to be trusted for the cure. I have often given a brisk cathartic of this kind, when the pulse has been so feeble as scarcely

scarcely to be felt, when hemorrhages, low delirium, nervous tremors and faintings, seemed to indicate the greatest debility; and after several copious, viscid, and excessively putrid evacuations, procured in this manner, have had the satisfaction to find, that the patient very soon acquired great increase of strength; that those threatening symptoms went off entirely, and that by continuing these evacuations, according to circumstances, the disease was soon brought to a happy termination.

At first, when the oppression and fulness in the epigastrium, or in the hypochondriac regions, were evident, I ordered friction with mercurial ointment on those parts, suspecting some visceral



visceral inflammation, and this was attended with such manifest good effects, that afterwards I never omitted it, even although the patients did not make the complaints that in other cases had suggested the application: For I found, that soon after using the friction on the region of the liver or spleen, they seldom failed having one or more evacuations, which were always of that very dark colour, and offensive nature, so necessary for the alleviation of all the symptoms.

With regard to the use of emetics, I seldom chose to give them alone, especially in the beginning of this disease, having seen many instances in which an emetic, taken without first moving the bowels, induced, in hot climates,

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an irritability of stomach, scarcely to be allayed by any means whatever. When they were esteemed necessary, I generally ordered them in the manner formerly mentioned, along with a solution of purging salts, or at least after several evacuations by stool had been procured. If spontaneous vomiting was a first symptom, as frequently happened, I ordered the stomach to be cleared with an infusion of chamomile, which, after two or three vomitings, generally allayed this symptom for a time; then I gave eight or ten grains of calomel, in as small a bulk as possible, strictly forbidding the patient to taste any thing till its action on the intestines began, at which time the irritation at stomach generally went off. In the more advanced stages of the

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the disease, however, I have seen the greatest advantage from emetics given alone: When the evacuations had gone on freely, and even when much dark-coloured matters had been voided, the patient has complained of much weight and oppression at stomach, with a degree of nervous starting, and great tendency to delirium, an emetic has then been ordered, and great quantities of black, viscid matters, resembling tar, sometimes with and sometimes without fetor, have been brought up, with immediate relief.

On the first days of the disease, for evacuating the stomach, I preferred the emetic tartar; in the more advanced stages, however, I found the powder of ipecacuanha, assisted with an infusion



infusion of chamomile more certain; and the after operation of the ipecacuanha on the bowels, if it happened to act in that way, was more desirable; for the emetic tartar acting upon the bowels produced merely watery evacuations, which in this stage of the disease had no good effect, whereas, the ipecacuanha evacuated the offending matters more copiously.

With regard to sudorifics, they were very little employed. In a few cases, in which a profuse sweating occurred spontaneously, early in the disease, it seemed to put a period to it. In general, however, although sweating was supported by means of cordials, &c. it exhausted the patient's strength exceedingly, and was so seldom attended with

with any permanent good effect, that I doubted whether, in the cases where a copious sweat restored health, the patients had ever been very deeply affected by the disease.

The bark appeared still more decidedly to be useless, whereas mercury, applied in different ways, produced the most salutary effects; for, when by means of the evacuations, produced chiefly from the use of calomel, sooner or later an intermission of fever took place, and an opportunity offered for trying the bark, no benefit was ever found, even in these circumstances, to result from it. But observing, that, in some cases in which, from the repeated doses of calomel, and a considerable use of the mercurial ointment, the

the body was evidently affected with mercury, the discharge of the putrid matters proved more free, also that all the secretions seemed increased, and that in these cases, no relapse succeeded; I was induced to give up the bark entirely, and to prescribe a mercurial course, taking care, even in this stage, to procure two or three evacuations daily, till the body became evidently affected, when I had the pleasure to see that the yellowness of the eyes and skin quickly went off; and if there was any fixed pain or numbness, as mentioned in the history, it soon disappeared, generally after some free evacuations by stool of highly offensive, and very dark-coloured matters, even although none of that appearance



ance had been voided for some days before.

The second indication in the method of cure, was attained by a proper use of laxatives, and regulation of diet.

In this disease, the whole body soon becomes loaded with putrid matters; and it was truly astonishing to observe, how largely these were secreted into the intestinal canal, even after the disappearance of all febrile symptoms; and if this was not carefully attended to, and the evacuations freely carried on for some time, the disease was certainly renewed. The re-accumulation was best obviated by mercurial laxatives;

tives \*; and as it was observed formerly, that in proportion to the accumulation of putrid matters in the intestinal canal, was the difficulty of moving the bowels; so also seemed the tendency to constipation in this stage, to the mass of putrid matters in the body.

The regulation of diet was particularly difficult; the appetite for food

\* R. Calomelanos, gr. xii.

Extr. cathartic. ʒi. M. ft. mass. quæ dividatur  
in pilul. xii. æqual.

Cap. æger tres omn. noct. et mane, vel quot  
sufft. ad alv. bis terve ind. movend. Vel

R. Calomelanos, gr. xii.

Pulv. ipecac. gr. viii.

— rhei, gr. xxxvi.

Mucilag.

food, immediately after the disappearance of fever, became so keen as to prove, even in the most determined, almost ungovernable; and the ease with which the convalescents procured improper food, however contrary to orders, rendered this stage of the disease not the least troublesome.

The diet allotted for them consisted of flummery, (flour boiled in water, with the addition of a little sugar), sago, or rice, and by degrees they were allowed weak broths, and a little fresh animal food. The drink allowed them was rice water, or water gruel.

### K After

Mucilag. g. Arab. q. s. ut ft. mass. quæ dividatur in pilul. xii. æq.

Sign. ut supra.



After the body had been sensibly affected with mercury, if the patient had been much weakened, he was ordered a few doses of bark daily; but most of the patients even in this situation recovered so fast, that it was omitted, and the only care necessary, was to prevent them from overloading their stomachs with food; for in this way they again often brought upon themselves slight febrile attacks, which, however, in general, soon yielded to an emetic, or a purge.

The third indication, *to relieve the urgent symptoms*, was of the utmost consequence in this disease, as it was entirely from a proper attention to it, that it was possible to give, or at least to obtain, much good effect from, the remedies

remedies on which the cure was more immediately to depend. And, *first*,

Of VOMITING.—This symptom was often the most troublesome attendant on the disease, and also the most alarming, as entirely impeding all steps towards the cure, and if long continued, completely exhausting the strength of the patient. I have already said, that it was often allayed for a time by drinking an infusion of chamomile; at other times, the saline draughts in a state of effervescence were particularly useful. Draughts containing ether were also given with advantage; but what I found by far the most efficacious for this purpose was calomel, given in large doses during the intervals

vals of vomiting, to which I sometimes, though rarely, joined an opiate.

Whether calomel as a purgative, and acting merely as such, allays this most troublesome symptom, or whether it produces this effect by any specific power of resolving that species of inflammation on which the irritability of the stomach in the fevers of hot climates seems greatly to depend, I know not; but I certainly have seen more immediate good from its action as a cathartic, than when given with the other intention, and in small dozes; I have, therefore, generally hastened its operation as a purgative by various enemas.

Hiccough,



Hiccough, nervous tremors, faintings, and disturbed sleep, were relieved by antispasmodics and cordials. Of the first, the chief I used was the volatile fetid spirit and ether; camphire was also frequently administered with the evening dose of calomel \*, with a view to procure sleep, and often seemingly with success; but frightful dreaming was so constant an attendant on the disease, that I much doubt whether the refreshing sleep was to be regarded as the effect of the camphire, or merely as a symptom of returning health. In cases of great apparent debility, when

\* R. Camphor. gr. v. vel. viii.

Spt. vin. gtts. iii. tere in pulv. Cui adde

Calomelanos, gr. x.

Confect. card. q. s. ut ft. [Bol. hor. somn. sumend.

when nervous fits and faintings were frequent, it was necessary to allow the patient wine pretty freely till the operation of the calomel took place, after which it was totally unnecessary, and became even improper, from its heating quality increasing the restlessness of the patient. Opium, as impeding the intestinal evacuations, was at last never used.

The strangury, and *ardor urinæ*, were relieved by small dozes of nitre, and drinking freely of barley-water, or a decoction of rice; and the hemorrhages from the nose were restrained by applications of cold water to the face, or by topical applications of a solution of alum. The mineral acids, when prescribed for this last symptom, occasion-

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ed severe griping, tenesmus, and small watery stools, exhausting the patient's strength without any good effect.

The great languor, listlessness and aversion to motion, which prevailed so remarkably in this disease, were, when indulged in, always attended with manifest bad effects; the patients were from the first attack, therefore, seldom or never allowed to remain in bed through the day; when unable to walk with proper assistance, they were carried upon deck, and exposed to the free air with the greatest advantage; if they had been delirious, or in a comatose state while below, these symptoms generally went off, after having been some time upon deck; the pulse also became more firm, and above all,  
(even



(even by carrying the patient upon deck, and much more so if he exerted himself and could walk), the calomel was rendered more certain and speedy in its operation. The state of the stomach was also much benefited by this treatment; for when it was so irritable, as almost to retain nothing while the patient remained below, it became much more retentive after he was exposed some time upon deck, especially if he made exertions to shake off that listlessness so very overwhelming. They, who from a mistaken caution could not be prevailed upon to leave their beds, and struggle with the disease, were always worse, and had a slower recovery than those who used every exertion, and continued freely in the open air.

## OF THE PROPHYLACTIC MEANS.

IN every situation, when febrile diseases are so general as that now treated of, the prophylaxis becomes a matter of the greatest importance, especially where, as in the present instance, those exposed to the calamity, are confined in a narrow space.

The sick were, as far as possible, kept by themselves; they were daily removed from their births for some hours,

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and these, together with the whole decks, were cleaned and fumigated, as formerly mentioned\*, and all excrementitious matters were instantly removed. The recruits were kept at three

\* For an account of the best mode of destroying contagion, and of fumigating infected rooms, &c. see the late publication of the ingenious Dr Carmichael Smyth, on the Jail-distemper; and also his Letter to the Right Hon. Lord Spencer, giving an account of the success with which the fumes of the nitrous acid were employed for this purpose on board the Union, hospital-ship, and several ships of war at the Nore, where a contagious fever lately raged with alarming violence. A due quantity of the vitriolic acid, and saltpetre, (the materials recommended for making this fumigation), together with the apparatus as described by Dr Smyth, should make necessary articles in the stores of every ship proceeding on a long voyage, and a thorough knowledge of the process, a necessary qualification of every jailor, and nurse of an hospital.



three watches, and the ship's company at two, whereby the decks were preserved as little crowded, and as sweet as possible. At the same time, from obstinate constipation being always a forerunner, as well as constant attendant, of the disease, from the very offensive evacuations, and frequent relapses, I was led to suspect some general bad quality of the diet: the English provisions which had hitherto been in use, were therefore changed for Irish; and, as a substitute for vegetables, and to correct, as far as possible, the bad effects of too large a proportion of animal food, and the tendency to constipation, each man was allowed a pint of spruce beer or porter daily, and a mess of a decoction of the essence of malt, with the addition of sugar and

a little spirits, was prepared every morning for their breakfast. Notwithstanding, however, the most attentive use of these prophylactic means, and a considerable alteration on the state of the bowels, which was induced by them, to which circumstance I think is to be imputed the milder aspect of the disease after passing the Cape of Good Hope, it was not till after enjoying a plentiful supply of fruits and fresh vegetables at Madras, that the disease entirely disappeared,

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Although, as I have already observed, the cause of this disease cannot be traced

traced to any precise source, and in that respect the disciples of the different opinions entertained with respect to the origin of the yellow fever in the western world, may be disposed to reject any comparison between them; yet, upon a careful examination of circumstances in the modes of the attack, in the progress of the symptoms, and even in the method of cure, I apprehend there will be found a very striking similarity; to me at least, a sameness of the diseases is very evident; so much so, that had the history of the yellow fever, as related by Dr Rush or Dr Chisholm, fallen into my hands, without a title, I should immediately have pronounced it to have been a history of the disease which occurred on board the *Busbridge*.

The



The circumstances of the similitude in the symptoms, as costiveness, obtuse pain in the right side, defect of appetite, flatulency, perverted taste, giddiness, dulness, and more or less yellow colour of the eyes, with dim and imperfect vision\*; at the same time, the sudden attack and striking appearance of the countenance, mentioned both by Dr Rush and Dr Chisholm†; the comatousness, and indifference about themselves, and every thing else, pains of the eyes, joints, and calves of the legs, together with the many symptoms of

\* *Vide* Account of the bilious remitting Yellow Fever, by Dr Rush, page 36.

† *Vide ut supra*, page 37. and Chisholm on the malignant pestilential Fever of the West Indies, page 105.

a nervous nature \*, also mentioned by these authors ; are all strong proofs of what I have advanced.

The eruptions or affections, mentioned by Dr Rush and Dr Chisholm to have appeared upon the skin, certainly were not apparent in the disease now described ; but, as these seem only to have taken place in the very last stages, when the patient was *in articulo mortis* †, this variety may be attributed to the disease in those instances running to a more advanced stage than was common on board the *Busbridge*. The hemorrhages from the nose, however, the irritability of the stomach, constantly

\* *Vide* Rush, page 60. Chisholm, page 116.

† *Vide* Chisholm, page 114.

constantly observed by these authors, and the striking similarity in the state of all the secretions and evacuations \*, certainly indicate a very intimate connection in the nature of these diseases.

In the method of cure, the sameness of the diseases is also evident from several striking circumstances. The administration of bark, and the whole tribe of tonics, antiseptics and cordials, by the practitioners in the West Indies, and in Philadelphia, availed but little; nay, as in the disease now treated of, they were manifestly hurtful †. The drastic purging powder, and blood-letting, at last had recourse to by Dr  
Rush,

\* *Vide* Rush, p. 51. to 59. Chisholm, p. 127.

† *Vide* Rush, p. 193. and 298. Chisholm, p. 170.



Rush, seems to have been infinitely more successful in subduing this formidable distemper, than any remedy which he had tried; and the use of calomel alone, or with opium, in order merely to induce salivation, was found the most successful method employed by the practitioners in the West Indies.

Concerning the action of the cathartic powder, I am fully satisfied; but that mercury, merely by inducing salivation, should operate so powerfully in curing the disease, astonishes me not a little, especially when the intestinal evacuations (though described to have been of a nature similar to what has been mentioned in the former part of this essay, and the retention of which I always regarded as ample cause of

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the continuance of all the symptoms), were checked by the use of opium\*. I am therefore inclined to attribute its beneficial effects chiefly to its peculiar action in resolving obstructions of the viscera, and in increasing all the natural excretions.

Dr Rush's *use and recommendation of blood-letting*, is also matter of great surprise to me; as his arguments, however in favour of it, derived from experience, seem very strong†; and, as I never had an opportunity of seeing the effects of it in my treatment, I can say little on the subject. It may however be observed, that in the hands of Dr Chisholm

\* *Vide* Chisholm, pages 159. 163. 234.

† *Vide* Rush, page 258, *et seq.*

Chisholm the practice was found very pernicious\*: And Dr Rush himself has the following observation: 'In the beginning of September, I found one or two moderate bleedings sufficient to subdue the fever; but, in proportion as the system rose by the diminution of the stimulus of heat, and the fever put on more visible signs of inflammatory diathesis, more frequent bleedings became necessary. I bled many patients twice, and a few three times, a day. I preferred frequent and small bleedings in the beginning of September, but towards the height and close of the epidemic,' about the 9th of November, 'I saw no inconvenience from the loss of a pint, or even

\* *Vide* Chisholm, page 158.



‘ even twenty ounces at a time \*.’ Yet he afterwards remarks, ‘ After the 15th of September my success was much limited, compared to what it had been before that time †.’

The reason which deterred me from ordering blood-letting, was, at first, the apprehension of a considerable tendency to putrescence ; and, at last, because, reaping every advantage from the use of purgatives, my prognosis of the fate of my patient was always favourable, in proportion to his possessing strength sufficient to undergo the operation of these ; I was therefore very cautious of weakening him by any other

\* *Vide* Rush, page 271.

† *Vide* Rush, page 315.

other means; nor have I now any reason to regret my never having used this remedy; because, if I am right, in affirming the disease, now treated of, to be of the same nature as that which was so fatal in the western world, and recorded by Dr Rush and Dr Chisholm, my success in the cure of it stands hitherto unparalleled.

The propriety of the opinions, (deduced from the common symptoms now related) concerning the seat and nature of this cruel distemper, yet remains to be established. Dr Rush says, that 'the blood-vessels are the seat and throne of this disease\*;' denying, that in any case a degree of putrefaction

\* *Vide Dr Rush, p. 40. et seq.*

trefaction of the fluids takes place\*; and Dr Chisholm thinks, that although the disease was at first of an inflammatory nature, yet that this stage was very quickly succeeded by a putrid diathesis, which tended with an uncommon degree of rapidity to the dissolution of the patient†. These authors also suppose a morbid congestion or *engorgement* of the brain, to constitute the chief part of the disease‡. It is not my intention to combat these opinions; it is enough that they are not inconsistent with a great tendency in the cause of the disease to affect the liver, and others of the abdominal viscera,

\* *Vide* Dr Rush, p. 73. *et seq.*

† *Vide* Chisholm, p. 150. and 151.

‡ *Vide* Rush, p. 48. Chisholm, p. 113.



cera, which I confess, to me always appeared to be the *true, original, and most permanent seat* of this formidable malady : And I observe, that the dissections described by those authors prove, that these viscera were particularly affected \*.

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THUS have I given a general and faithful narrative of the circumstances relating to the nature and history of this disease, as it appeared on board the *Busbridge East Indiaman*, together with the method of cure successfully employed ; and in doing this, I have been less anxious about style, than about stating the facts in a simple and plain manner, as they stood in my  
notes

\* *Vide* Rush, p. 119.      Chisholm, p. 136.

notes on the subject, written during the prevalence, and soon after the disappearance, of the disease; trusting that any inaccuracies that have occurred in the former, may be forgotten, in consideration of the latter. I therefore conclude with a wish, that should this cruel malady ever again become prevalent, recourse may be had to the remedies which have been now mentioned, and which, I am convinced, will be found equally beneficial in the hands of others, as they have already been in mine; thus bringing under the controul of medecine, a distemper which has hitherto, with much cause, been considered as one of the severest scourges of mankind. In expressing myself thus confidently, I look for my apology in the success which attended my

my mode of treatment ; more particularly, when it is recollected, that of nearly three hundred instances which fell under my immediate care, only three proved fatal ; and the bad success in these, from what has been mentioned in the history respecting them, the candid will, with myself, be disposed to attribute to circumstances which by no means impeach the method of cure that I recommend.

F I N I S.



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THE YELLOW PERIL

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When it is received from

1912-1913

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1911-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-

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